Remarks by the Honorable Sean O'Keefe
NASA Administrator
The International Space Station

International Space Station Overview

- Because of NASA's leadership in helping to establish the International Space Station, we are the first generation to be alive when there will always be men and women living in, investigating, and exploring the realm outside of our planetary home, 365 days a year.

- Tuesday, July 29th is the International Space Station's 1,000th day on orbit. The Station travels at 17,500 miles per hour, moving 1,000 miles about every 3 minutes and 25 seconds.

- The International Space Station has hosted seven Expedition crews (10 astronauts and 10 cosmonauts) and over 60 experiments spanning across such scientific disciplines as human physiology, genetics, plant biology, Earth observations, physics, and cell biology.

- From these experiments, scientists are learning better methods of drug testing; developing models that predict or explain the progress of disease; investigating how to use microbes to make antibiotics; and determining how to improve manufacturing processes.

- We continue to work toward completion of the most sophisticated orbital laboratory ever constructed: The ISS is a laboratory of profound significance for human exploration beyond low Earth orbit.

- This unique facility will enable researchers to understand and reduce the health risks of long duration space travel, including radiation effects and bone and muscle loss.

- It will also continue to serve as a platform to demonstrate advanced space technology and operational techniques which must be mastered before we continue with our next exploratory steps in space.

- Early research on the ISS is focused on the effect of the space environment on space travelers. ISS-based research will focus on advanced human support technology, materials science, combustion science, fundamental physics, Earth science, and space science.

- As soon as NASA is able to begin safely flying the Space Shuttle's again, we will continue to assemble the U.S. elements of the ISS, beginning with the flight of Atlantis, which will carry up a major truss segment for the Space

Station. Following the eventual achievement of "U.S. Core Complete," on-orbit assembly will transition primarily to integrating the International Partner elements.

- When people look back and ask what was important about the ISS, it will be the scientific achievements that will be remembered.

International Space Station: Memorable Moments and Experiments

- Astronaut Frank Culbertson was the only American not on Earth on September 11, 2001. From his perch on the International Space Station, Culbertson took photographs and described the agony and destruction of the World Trade Center Towers as events in Lower Manhattan unfolded. Culbertson's images are among the most striking taken during that terrible and tragic day.

- During the Expedition One mission in 2000, students participated in the first American science experiment on the Space Station—the Enhanced Gaseous Nitrogen Dewar. To date, more than 700 students and teachers have sent samples to the Space Station as part of the Enhanced Gaseous Nitrogen Dewar—a facility that has flown structural biology experiments four times on the Space Station.

- Millions of Americans and millions more throughout the world have seen the International Space Station as it arcs over our homeland. Web-based software provides an easy way to track and view Space Station at: http://spaceflight.nasa.gov.

- EarthKAM is an educational payload that allows middle school students to conduct research from the International Space Station. Using the Internet and a digital camera mounted to the Space Station's laboratory window – EarthKAM students have taken over 5,000 stunning, high-quality photographs of our planet.

- During Expedition Five, NASA Space Station Science Officer Peggy Whitson tended the first ever soybeans grown in space. The soybean plants and beans were dried and returned to Earth by Space Shuttle Atlantis on the STS-112 mission in October.

- On the Expedition Six mission, NASA Space Station Science Officer Don Pettit treated people throughout the world who followed the mission on the internet to Saturday morning science presentations. Don was a combination of Mr. Wizard and Bill Nye the Science Guy on these presentations, demonstrating everything from how alka seltzer tablets interact with a sphere of water in zero gravity to photographing the Aurora Borealis putting on a show over Canada at night, to showing how he could eat tea with chopsticks.

- The Microgravity Science Glovebox—a sealed container with built in gloves on its sides and fronts—makes it easier for ISS crews to work safely with experiments that involve fluids, flames, particles and fumes that need to be safely contained. Since the Glovebox's arrival in 2001, two materials science experiments and one fluid physics experiment have been conducted using the Glovebox.

- NASA scientist Dr. Rafat Ansari, who works with fluid physics experiments conducted by ISS crew members, realized than an instrument being developed as part of an experiment with colloids—small particles suspended in liquids—might be able to detect cataracts in their early stage of formation. The device is now being used to assess the effectiveness of new, nonsurgical therapies for early stages of cataract development. It is also being adapted as a pain-free way to identify other eye diseases, diabetes, and possibly even Alzheimer's.

- Experiments onboard the ISS could accelerate the drive toward a hydrogen-based economy. A series of commercial experiments sponsored by energy companies working with a NASA Research Partnership Center began in early 2002. The experiments grew zeolite crystals which can be used as hydrogen storage devices. Ken Bowersox, the ISS Expedition 6 commander, used the furnace to grow some crystals. Ken had to correct some unexpected problems with the mixing of the crystal growth solution, which shows the value of having humans help out with science experiments in space.